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CONTINUITY SHEET FOR REEL #6.

ELEMENTS OF THE AUTOMOBILE.

MAY -2 1921

M T

Part 6.

M T

The Bray Pictures Corporation  
presents  
"ELEMENTS OF THE AUTOMOBILE"  
by  
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assisted by  
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1 Reel

M T

Produced for  
The Education  
And Recreation Branch  
General Staff  
under the supervision  
of the  
Motor Transport Division  
 Quartermasters Corps  
United States Army.

M S

The Four-Cylinder Engine.

Sub

So far, the engine shown has consisted of one cylinder.

Sc 1

Close up of very simple engine without valves. Action with explosions every down stroke of piston.

Sub

The time between explosions is too great.

Sc 2

Very simple one cylinder engine. Action with explosions every other revolution.

Sub

The shorter the time between explosions, the smoother the engine runs.

Sub

The time interval between explosions may be shortened in two ways.

(1) By using a number of cylinders.

Sc 3

Simple four cylinder engine in section. Action with explosions.

Sub

(2) By operating the engine at high speed.

Sc 4

Simple four cylinder engine. Action at high speed.

Sub

The four cylinder engine is practically a combination of four one-cylinder engines.

Sc 5

- Sc 5 Simple four-cylinder in action. Flash to long shot of car. Engine in section, action.
- Sub The complete engine.
- Sc 6 Rear outside view of engine complete.
- Sub It is supported at three points.
- Sc 7 Four-cylinder engine, outside view. Pointer indicates where supported. Arrows dissolve in. Engine is turning around. Flash to long shot of engine with arrows. Frame dissolves in.
- Sub In the one-cylinder engine the valves were on opposite sides.
- Sc 8 Section of one-cylinder engine in close up. Pointer indicates valves.
- Sub This is called a T-head.
- Sc 9 One-cylinder engine dissolves to T-head and back again to one-cylinder engine.
- Sub In another type of engine the valves are on one side--
- Sc 10 One-cylinder L-head engine. Pointer indicates both valves on the same side.
- Sub The valves are operated from one camshaft.
- Sc 11 Pointer indicates camshaft.
- Sub This type is called an L-head.
- Sc 12 L-head engine dissolves to L and back again to engine.
- Sub The four-cylinder engine used on this car is an L-head.
- Sc 13 Four-cylinder in section. Dissolve to outside view. No manifold or valves. Dissolve to an L-head block and back to engine.
- Sub All the valves are on one side.
- Sc 14 Outside view. Valves dissolve in. Dissolve to section of engine through valves.
- Sub A divided pipe from the carburetor called the intake manifold supplies the cylinders with gas.
- Sc 15 Intake manifold dissolves in. Dissolve to close up of manifold and cylinders. Dissolve to section of manifold. Dissolve to section of cylinders exposing parts. Action of arrows leaving carburetor and entering cylinders. Repeat sever 1 times.
- Sc 16 Each cylinder has an intake valve.

- Sc 16 Close up of cylinders. All intake valves dissolve in together.
- Sub As each valve opens, gas is drawn into its cylinder.
- Sc 17 Action of arrows and valves.
- Sub The burned gases escape through the exhaust valves.
- Sc 18 Close up of cylinders. Intake valves and carburetor dissolve out. Exhaust valve parts dissolve in. Exhaust valves dissolve in.
- Sub As each valve opens the burned gas escapes from the cylinder.
- Sc 19 Action of valves and arrows.
- Sub The burned gas is carried off through the exhaust manifold.
- Sc 20 Manifold dissolves in. Dissolve to section. Action of valves and arrows. Manifold dissolves out. Intake valves dissolve in. Dissolve to outside view, complete with carburetor and both manifolds.
- Sub The valves are all operated by one camshaft.
- Sc 21 Engine complete. Valves exposed. Dissolve to breakaway, showing camshaft.
- Sub Each cylinder has an intake and exhaust valve.
- Sc 22 Pointer indicates valves.
- Sub Each cam is set to lift its valve at the correct time.
- Sc 23 Pointer indicates cams. Action of cams lifting valves.
- Sub The camshaft turns at one-half the speed of the crankshaft, as in the one-cylinder.
- Sc 24 Section of cylinders, pistons, crankshaft and timing gears exposed. Cylinders and pistons dissolve out. Action of camshaft and crankshaft. Flash to compound phantom of action of valves, pistons, explosions, crankshaft and camshaft.
- Sub While the engine is running, it is continually drawing fresh gas through the intake manifold, and forcing out the burned gas through the exhaust manifold.
- Sc 25 Outside view of engine manifold in section. Action of arrows in manifold.
- Sub Each piston goes through the four strokes of the cycle independently.

Sc 26      Outside view of engine. Manifold in section. Action  
of arrows. Dissolve out in action to phantom and sec-  
tion of gases.

Sub      End of part 6

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